UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,053	06/24/2003	Dae-Ho Choo	61920219C1	7598

7590 10/05/2004

McGuireWoods LLP
Suite 1800
1750 Tysons Boulevard
McLean, VA 22102

EXAMINER	
RUDE, TIMOTHY L	
ART UNIT	PAPER NUMBER
2883	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/602,053	CHOO ET AL.	
	Examiner	Art Unit	
	Timothy L Rude	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *56-61 and 63-70* is/are pending in the application.

4a) Of the above claim(s) *60,65 and 70* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *56-59,61,63,64,66,67 and 69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims

1. Claims 62 and 68 are canceled. Claims 56-59, 61, 63, 64, 66, 67, and 69 are amended.

Drawings

2. The objection to Figure 9B is withdrawn.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim 56 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,657,701 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 56 is more broad and its limitations are found in claim 1.

Specifically, claim 1 contains the limitations of claim 56 as well as further limitations drawn to the application of a predetermined force and performing a second hardening process on the sealant. Applicant's amendment to claim 56 is considered merely a matter of semantics; that is, the specification of 6,657,701 B2 makes it quite clear that the words of claim 1 of 6,657,701 B2 read on claim 56 of the instant Application as presently amended.

Election/Restrictions

4. It is respectfully pointed out that Applicant has amended claim 56 to replace "dispersing spacers" with - - forming a spacer - -, and Applicant has amended claim 56 to replace "forming a reaction prevention layer on a surface of the sealant" with - - exposing the sealant to an ultraviolet ray to partially harden the sealant - -. In order to avoid withdrawal of the only base claim, 56, as being drawn to non-elected species these amendments are considered substitution of non-patentably distinct species [MPEP 808.01(a)]. If applicant does not agree, a restriction will be made [MPEP 818.01]. Please note that originally presented and/or previously presented claims presented the species of "dispersing spacers" (claim 56) and hardening by infrared rays (claim 68).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 56-59, 61-64, and 66-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Von Gutfeld et al (Von Gutfeld) USPAT 6,055,035, provided by Applicant, in view of Chiklis, USPAT 4,647,157, provided by Applicant.

As to claim 56, Von Gutfeld discloses in Figures 3 and 4, a method for manufacturing liquid crystal displays with at least one liquid crystal cell comprising beads or lithographically placed studs (col. 5, lines 19-25) (Applicant's dispersing spacers or forming a spacer), a peripheral unpolymerized sealant (col. 2, lines 50-53), a liquid crystal layer deposited before the panel plates are affixed together (col. 2, lines 20-23), and evacuating before the plates are permanently sealed (col. 2, lines 29-43) (Applicant's conjoining the substrates in a vacuum state.

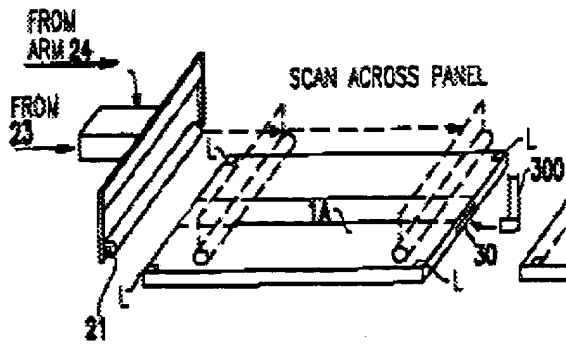

FIG.3

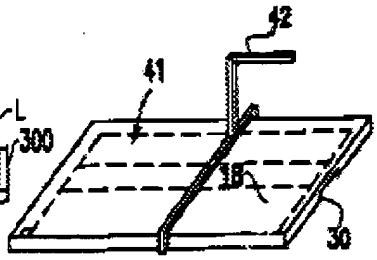

FIG.4

Von Gutfeld does not explicitly disclose a first hardening of the sealant.

Chiklis teaches in example 1, the step of drying of the sealant at 66 degrees C (col. 8, lines 49 and 50) (Applicant's forming a reaction-prevention layer on a surface of the sealant by a first hardening process, not patentably distinct from exposing to an ultraviolet ray), prior to the addition of liquid crystal material to achieve an LCD assembly whereby leakage and current characteristics of the cell were not degraded (col. 8, lines 59-63).

Chiklis is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add a first hardening process step to achieve an LCD assembly whereby leakage and current characteristics of the cell were not degraded.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Von Gutfeld with the first hardening step of Chiklis to achieve an LCD assembly whereby leakage and current characteristics of the cell were not degraded.

As to claim 58, mere automation of steps including the use of an in-line process is considered an obvious expedient, not patentably distinct (MPEP 2144.04 III). Specifically performing the steps of dispersing the spacers, depositing the sealant, depositing the liquid crystal and conjoining the substrates as in-line processes would have been an obvious expedient to those having ordinary skill in the art at the time the claimed invention was made since a series of steps performed by had are generally more efficiently done by an in-line process.

As to claim 59, Von Gutfeld discloses sealant on the lower substrate (col. 6, lines 39-42) and spacers applied to the lower substrate along with the liquid crystal material (col. 7, lines 55 and 56), resulting in all three components disposed on one substrate.

As to claim 61, Von Gutfeld discloses conjoining substrates comprising the step of pump-out before the plates are permanently sealed (col. 4, lines 24-30) (Applicant's gradually achieving the vacuum state).

As to claim 62, mere automation of steps including the use of a predetermined time period is considered an obvious expedient, not patentably distinct (MPEP 2144.04 III). Specifically placing the two substrates in the vacuum state in a predetermined time period would have been an obvious expedient to those having ordinary skill in the art at

the time the claimed invention was made since process steps performed by hand generally require a certain amount of time to perform.

As to claim 63, Von Gutfeld discloses aligning, applying a predetermined force by the introduction of an inert gas at atmospheric pressure (which raises the pressure of the vacuum in the LC thereby: Applicant's controlling the vacuum), and final cure or hardening of the seal material (col. 7, lines 6-35) (Applicant's attaching by the sealant, exposing the sealant; and performing a second hardening process of the sealant).

As to claim 64, Von Gutfeld discloses aligning, applying a predetermined force by the introduction of an inert gas at atmospheric pressure (which raises the pressure of the vacuum in the LC thereby: Applicant's controlling the vacuum), and final cure or hardening of the seal material (col. 7, lines 6-35) (Applicant's attaching by the sealant, exposing the sealant; and performing a second hardening process of the sealant).

As to claim 66, Von Gutfeld discloses depositing liquid crystal over an entire surface of a first panel plate (col. 2, lines 63-67) (Applicant's liquid crystal cell).

As to claim 67, Von Gutfeld discloses use of a seal material disposed on the peripheral edges of at least one substrate (col. 2, lines 48-52) (Applicant's closed loop).

As to claim 68, Chiklis, as combined above, teaches the use of heat curing of the seal material (Applicant's hardened by infrared rays) in example 1 (col. 8, lines 56-63).

As to claim 69, Von Gutfeld discloses the use of an opening in the first plate (col. 9, lines 28-36), or cut-out sections in at least one of the first and second plates (col. 10, lines 54-58) to allow excess liquid crystal material to drain (Applicant's buffer region, which have a predetermined area for excessive liquid crystal material).

Response to Arguments

Applicant's arguments filed on 29 June 2004 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are as follows:

(1) Chiklis uses flurolastomeric terpolymer.

(2) Chiklis does not use UV cure.

Examiner's responses to Applicant's ONLY arguments are as follows:

(1) It is respectfully pointed out that Applicant's claims do not preclude the use of such terpolymer.

(2) Applicant may not presently claim UV cure as a patentably distinct species due to receiving an office action of originally presented/previously presented alternate species [MPEP 818.01].

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Timothy L Rude
Examiner
Art Unit 2883

tlr

Frank G. Font
Supervisory Patent Examiner
Technology Center 2800

JANICE A. FALCONE
DIRECTOR
TECHNOLOGY CENTER 2800